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ABSTRACT

An Outdoor Classroom to prepare pre-service and in-service teachers to utilize vital natural resources as an outdoor laboratory was established in 1974 by Elizabeth City State University. Because of its proximity to the Great Dismal Swamp and the Atlantic, the university's geographical location made it especially suitable for such a course of study. The classroom area involves a 15-acre tract of wooded land containing many unusual growth patterns of plants, relics of Indian culture, and an abundance of resource material, including a weather station, swamp, pond, stream, and many plant and tree varieties. Students are guided in procedures to be utilized in the selection of study areas, trail markings, plant identification, plant successions, soil profiles, soil testing, and the relationship of abiotic and biotic factors. Some of the stated goals of the Outdoor Classroom are (1) to serve as a laboratory for biological, physical and social sciences as well as the humanities and vocational education; (2) to assist teachers in learning to "set up" outdoor laboratories; (3) to provide an economic "hands on" source of teaching materials; and (4) to assist public school classes and other organizations in acquiring increased knowledge of the environment. Outdoor experiences for community groups and classes from kindergarten through college have been provided and the Outdoor Classroom has done much to establish vitally needed rapport with the public schools and the community at large. (DS)

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39

THE OUTDOOR CLASSROOM

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SUMMARY

Elizabeth City State University, in cooperation with the United States Department of Soil Conservation and the North Carolina Department of Forestry, established in 1974, an Outdoor Classroom to prepare pre-service and in-service teachers to utilize vital natural resources as an outdoor laboratory. The area involves a tract of approximately 15 acres of wooded land in close proximity to the University campus. The area had remained undisturbed by man for a minimum of 200 years, and was at one time covered by the waters of the Atlantic Ocean. Many unusual growth patterns of plants, relics of Indian culture and an abundance of resource material are available. Students are guided in procedures to be utilized in the selection of study areas, trail markings, plant identification, plant sucessions, soil profile studies, plant and animal relationships, soil testing activities, and the relationships of abiotic and biotic factors. Students then assist public school teachers in establishing outdoor laboratories on their campuses. In-service teachers are encouraged to permit students to summarize and evaluate indoor classroom units with the use of guided tours that give first hand experiences in collecting, ident fying and solving individual and group problems. It provides outdoor experiences for classes and community groups from kindergarten through college. The Dismal Swamp State Park Reservation Ranger Naturalist has expressed interest in having University students engage in individual and group research projects. The Outdoor Classroom has done much to establish vitally needed rapport with the public schools and the community at large.

COMPREHENSIVE EXPLANATION
(OF THE OUTDOOR CLASSROOM)

A. Description and Development of the Program.

The need for an outdoor laboratory became evident because so many pre-service and in-service teachers have had very little experience with knowledge concerning the environment. Also, the State of North Carolina strongly supports a program of environmental education. The United States Soil Conservation Service and the Department of Forestry heartily applaud the environmental education efforts and have actively supported these projects.

The geographic location of Elizabeth City State University makes it especially suitable for the study of diversity and ecology because of its close proximity to the Great Dismal Swamp and the Atlantic Ocean. Emphasis is placed on "how to" projects, such as: how to "set up" a nature trail, how to determine study areas, how to conduct field studies, how to collect, identify and maintain living organisms in the classroom, what ecological problems are peculiar to Eastern North Carolina and how a study of these problems may be incorporated into our indoor classroom courses.

The initial procedures involved permission from University administrative officers to utilize the area to set up an outdoor laboratory. A committee was organized, composed of: a local conservationalist, a State forester, the University Business Mana[illegible], the Superintendent of Buildings and Grounds, the Vice Chancellor for Academic Affairs, Chairmen of the Departments of Biology, Industrial Arts, Art, Environmental Science, a biology major, a representative from the local newspaper, and a radio station employee. Members of the group met and surveyed 19 study areas. These were points of interest and problem solving stations. A trail was marked to connect these points and a path 3 feet wide was cleared. Strong bridges were constructed across ditches and low areas.

Wood chips, donated by a local lumber company, were used to cover the trail. Stations or points of special interest were numbered on boards and placed on trees beyond the reach of vandals. Local foresters assisted with tree identification. A bridge or miniature observation tower was constructed over a swamp area to provide a safe area of study without fear of a thick, water-snaked habitat. A section of a ditch near the Observation Tower was enlarged and deepened to form a permanent pond. Tree identification labels, cut in the shape of leaves were painted a light green color and the common and scientific names were imprinted. Financial assistance was requested from the University, industrial firms, clubs, civic clubs and teachers.

The following areas were included as study areas: weather station, an area of plant identification, a living "shell" of a tree, a bird hotel (a standing dead tree that provide nesting sites for birds, loblolly pines (with use of increment borers to make ring studies), fused trees showing a rare example of two species (a sweet gum and an oak) growing together, resurrection fern, jack in the pulpit, aquatic study area (a small stream), flood plain and water shed study, a soil profile, a fallen tree (showing root structure soil layers, and the beginning of plant successions), large trees (climax vegetation), fungi on standing tree, a decayed log, cypress trees and cypress "knees", pond and bridge, plant successions, natural pine seeding and an outdoor shelter.

B. Objectives and Goals.

The Outdoor Classroom is designed to:

1. Serve as a laboratory for all studies in the curriculum including biological, physical and social sciences as well as the humanities and vocational education;

2. Assist pre-service and in-service teachers in learning how to "set up" outdoor laboratories;
3. Provide an economical practical "hands on" source of materials for teaching;
4. Direct students in problem solving techniques;
5. Assist public school classes, clubs and civic organizations in acquiring increased knowledges concerning the environment and its interrelationship; and
6. Improve lines of communication between the University and the community. (For program's wider influence in teacher education see items E and F).

C. Personnel Involved.

Persons involved in the program include Mrs. Dorothy E. Thomas, Project Director; Mr. Frank Veach, Area Soil Conservationalist; Dr. Sekender A. Khan, Chairman of the Department of Biology; Dr. Maurice Powers, Professor of Geology, Mr. Herb Krase, Local Forester; Mr. Harvey L. Thomas, Superintendent of Buildings and Grounds; Members of the classes of Methods of Teaching Biology and public school principals.

D. Budget.

Listed below is the budget:

Weather Station and Equipment	$ 1,000.00
Outdoor Shelter	1,250.00
Bridges	200.00
Entrance Sign	50.00
Directional Signs	20.00
Paint	30.00
Cameras, Films, and Projection Equipment	1,000.00

Duplicating Supplies	$ 50.00
Chain Link Fence Around Weather Station	300.00
Labels for Tree Identification	20.00
Total	$ 3,920.00

Sources of funds are: The University Office, Vice Chancellor for Academic Affairs' budget, Maintenance Department budget, Western Electric Corporation, and Union Camp Corporation.

E. Contributions to the Improvement of Teacher Education.

Participants have expressed much enthusiasm about the project. Classes in Art, Geology, Mathematics as well as Biology and Chemistry have utilized the Outdoor Classroom for practical experiences, learning laboratories and motivation incentives. Several civic organizations and public school classes have been directed on tours by members of methods classes in Biology. Student teachers have assisted in-service teachers in setting up outdoor classrooms. The local newspaper devoted a full page to pictures and explanations concerning the project. Radio Station, WGAI, on several occasions has played a 30 minute tape of a guided tour through the Outdoor Classroom. Boy Scout groups have selected the area for projects such as building bird houses and squirrel nesting boxes. The Outdoor Classroom was included in the brochures for the Bi-centennial tours for Elizabeth City. Teachers from public schools have been supplied with teaching supplies (cultures, etc.) from the project. Students have been able to solve such problems as an understanding of the quantitative and qualitative tissue requirements of plants for growth (exhibited in the "shell of a tree") and the significance of re-cycling, cypress knees and successions.

F. Evaluation Methods and Results.

The Project Director has been invited to conduct two one hour lecture-slide presentations for the annual meetings of the North Carolina Science Teachers Association for two consecutive years (1975-76). She has also been invited to present a one hour lecture - slide presentation on "Creative Experiences in Using the Outdoor Classroom" for the annual meeting of the National Association of Science Teachers, Cincinnati, Ohio, March, 1977. During each of these presentations copies of guidelines to be used in setting up similar projects were issued and explained to each participant.

Six Lecture - slide presentations have been given.

Eight Guided tours for public school classes (kindergarten through college) have been conducted.

Five departments in the University have utilized the Outdoor Classroom.

Four student teachers have assisted in-service teachers in setting up classrooms.

One guided tour was conducted for a Boy Scout Group.

One guided tour was conducted for personnel of the Museum of the Albemarle.

It is highly recommended that others who wish to set up similar programs organize an initial planning committee that would include representatives from the United States Department of Conservation, the North Carolina Department of Forestry, and the Public School System as well as local school personnel.

In order for such a project to be effective it should be under the control or sponsorship of the Board of Education or Board of Trustees and should be located within walking distance of the school grounds.